

## REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith, which place the application into condition for allowance. The present amendment is being made to facilitate prosecution of the application.

### I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1-9 are currently pending. Claims 1, 8 and 9 are independent and are hereby amended. No new matter has been introduced. Support for this amendment is provided throughout the Specification as originally filed.

Changes to the claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

### II. REJECTIONS UNDER 35 U.S.C. §103

Claims 1-2 and 7-8 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,218,668 to Higgins et al. (hereinafter merely "Higgins") in view of U.S. Patent No. 5,963,903 to Hon et al. (hereinafter merely "Hon");

Claim 3 was rejected under 35 U.S.C. §103 as allegedly unpatentable over Higgins and Hon in view of Chiang et al. ("*On Jointly Learning the Parameters in a Character-Synchronous Integrated Speech and Language Model*," 1996) (hereinafter merely "Chiang"); and

Claims 4 and 9 were rejected under 35 U.S.C. §103 as allegedly unpatentable over Higgins and Hon in view of U.S. Patent No. 6,178, 401 to Franz et al. (hereinafter merely “Franz”).

Claims 5 and 6 were rejected under 35 U.S.C. §103 as allegedly unpatentable over Higgins and Hon in view of U.S. Patent No. 5,960,447 to Holt et al. (hereinafter merely “Holt”).

Applicants respectfully traverse this rejection.

Independent claim 1 is representative and recites, *inter alia*:

“ . . . selecting one or more candidate second words from the plurality of input words not based on the acoustic score, the candidate second words having unstable acoustic characteristic values with a number of phonemes less than a preset value;”

The speech recognition apparatus according to the present invention includes selection means for selecting candidate first words from the input words based on a word score that represents an evaluation of acoustic scores and language scores selecting candidate second words from the plurality of input words not based on the acoustic score. *See, for example*, Publ. App. pars. [0100]-[0101] and [0103]-[0104].

Moreover, claim 1 recites, “selecting one or more candidate second words from the plurality of input words not based on the acoustic score.” That is, after a selection of the first words, second words are selected based on a non-acoustic model. That is, the apparatus selects those words registered in the dictionary that are generally shorter in enunciation time, such as the words the number of phonemes and syllables of which are less than a pre-set value, for example, prepositions or articles in English and adjuvants or adjuvant-verbs in Japanese, without regard to

the acoustic scores thereof, to send the selected words to the matching unit. In this case, the words having short enunciation time necessarily become the object of the matching processing.

Publ. App. par. [0102].

Thus, first candidate words are selected based on the word score including the acoustic score calculated from the acoustic characteristic value, while selecting the words having unstable acoustic characteristic values having a small number of phonemes, such as adjuvants or adjuvant-verbs in Japanese or prepositions or articles in English, based on a measure irrelevant to the acoustic score calculated from acoustic characteristic values, these words being matching-processed in the matching unit, thus preventing deterioration of precision in the speech recognition otherwise caused by non-selection of the words having unstable acoustic characteristic values. Publ. App. par. [0116].

Because the words having a small number of phonemes and unstable acoustic characteristic values are necessarily processed for matching, only the words having a large number of phonemes and hence more stable acoustic characteristic values may be selected based on the word score including the acoustic score.

A non-acoustic selection method is then used to select words having unstable acoustic characteristics. That is, selected words likely to be concatenated to a sequence towards a node under consideration of a path reaching the node under consideration, based only on the language score obtained from the grammatical rule derived from the statistic word concatenation probability. Because the word is selected in this case without taking the acoustic score calculated from the characteristic values into account, it is possible to prevent the accuracy in the speech recognition from being deteriorated by failure in selection of such words the acoustic score of

which is diminished by the unstable acoustic characteristic values and hence the word score of which is decreased. Publ. app. pars. [0117]-[0122].

Neither Higgins nor Hon nor Chiang nor Franz teach or suggest the elements of claim 1 as discussed above.

For reasons similar or somewhat similar to those described above with regard to independent claim 1, independent claims 8 and 9 are also believed to be patentable.

### **III. DEPENDENT CLAIMS**

The other claims are dependent from one of the claims discussed above and are therefore believed patentable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

### **CONCLUSION**

Claims 1-9 are in condition for allowance. In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited reference, or references, it is respectfully requested that the Examiner specifically indicate those portions of the reference, or references, providing the basis for a contrary view.

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In view of the foregoing amendments and remarks, it is believed that all of the claims in this application are patentable and Applicants respectfully request early passage to issue of the present application.

Respectfully submitted,

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